

## BIOGRAPHICAL SKETCH

**NAME:** Peter Gilmour

**POSITION TITLE:** Postdoc

### EDUCATION/TRAINING

Institution	Degree	Year	Field of Study
Napier University, Edinburgh, UK	B.S.	1992	Biological Science
University of Abertay, Dundee, UK	M.S.	1993	Biotechnology
Napier University, Edinburgh, UK	Ph.D.	1998	Pulmonary toxicology

### PROFESSIONAL EXPERIENCE:

1998-1999: Napier University, Edinburgh: Post-doc. Evaluation of the ability of in-house produced anthraquinone anti-cancer agents to inhibit topoisomerase I & II enzymes. Identified compounds suitable for phase II and III trials.

1999-2002: Edinburgh University: MRC Research Fellow. Mechanisms involved in PM-associated cardiovascular disease including; PM-associated inflammatory gene transcription (histone acetylation), susceptibility to PM-mediated inflammation (latent adenovirus infection) and in vivo and in vitro analysis of systemic coagulation enhancement by PM.

2002-Present: Research Fellow, CEMALB/US-EPA. Mechanisms of PM-mediated cardiovascular disease. Determination of the pro-coagulative effect of PM in the lung in vivo. Studies include; the role of fibrinolysis in the lung and cardiovascular disease associated with PM, PM-mediated oxidative stress and coagulation, the role of particle-associated zinc in lung and cardiac tissue injury, susceptibility to endotoxin imparted by PM exposure, and evaluation of the spontaneous hypertensive rat model in studying the cardiovascular health effects of PM.

### PROFESSIONAL SOCIETIES:

British Association for Lung Research

### SELECTED AWARDS AND HONORS:

#### INVITED LECTURES/SYMPOSIA:

British Thoracic Society, London, UK, December 1999. Latent adenoviral infection renders alveolar epithelial cells susceptible to particle induced transcription of pro-inflammatory mediators.

British Association for Lung Research, Edinburgh, UK, September 2000. E1A transfection sensitises lung epithelial cells to oxidative stress and environmental particles.

Inhaled Particles IX, Cambridge, UK, September 2001. PM<sub>10</sub>-mediated IL-8 release from epithelial cells involves histone acetylation and is modulated by thapsigargin.

European Respiratory Society, Stockholm, Sweden 2002. Tissue factor, fibrinolysis and the cardiovascular effects of PM<sub>10</sub>.

American Association for Aerosol Research: 4<sup>th</sup> Colloquium on PM and Human Health, Pittsburgh, USA 2003.

Hypertensive rats are susceptible to TLR4-mediated signaling following exposure to combustion particulate matter (PM).

### ASSISTANCE/LEADERSHIP PROVIDED TO THE SCIENTIFIC COMMUNITY:

### ASSISTANCE/LEADERSHIP PROVIDED TO THE AGENCY:

### PUBLICATIONS (From January 1, 1998 to present, out of a total of 24 publications):

1. MacNee W, Li XY, Gilmour PS, Donaldson K. (2000) Systemic effects of particulate air pollution. Inhalation Toxicol. 12: 233-244.

2. Donaldson K, Stone V, Gilmour PS, Brown DM, MacNee W. (2000) Ultrafine particles: mechanisms of lung injury. *Phil. Trans. R. Soc. Lond.* 358: 2741-2749.
3. Gilmour PS, Rahman I, Hayashi S, Hogg JC, Donaldson K, MacNee W. (2001) Adenoviral E1A primes alveolar epithelial cells to PM(10)-induced transcription of interleukin-8. *Am J Physiol Lung Cell Mol Physiol.* 281:L598-606.
4. Rahman I, Mulier B, Gilmour PS, Watchorn T, Donaldson K, Jeffery PK, MacNee W. (2001) Oxidant-mediated lung epithelial cell tolerance: the role of intracellular glutathione and nuclear factor-kappa B. *Biochem. Pharmacol.* 62: 787-794.
5. Duffin R, Gilmour PS, Schins RPF, Clouter A, Guy K, Brown DM, MacNee W, Borm PJ, Donaldson K. and Stone V. (2001) Aluminium lactate treatment of DQ12 quartz inhibits its ability to cause inflammation, chemokine expression and NF-kB activation. *Toxicol. Appl. Pharmacol.* 176: 10-17.
6. Jimenez LA, Drost EM, Gilmour PS, Rahman I, Antonicelli F, Ritchie H, MacNee W, Donaldson K. (2002) PM(10)-exposed macrophages stimulate a proinflammatory response in lung epithelial cells via TNF-alpha. *Am. J. Physiol. (Lung Cell Mol. Physiol.)* 282: 237-248.
7. Gilmour PS, Donaldson K, MacNee W. (2002) Overview of the antioxidant pathways in relation to effects of air pollution. Review. In "The Impact of Air Pollution on Respiratory Health" (eds. D'Amato G., Holgate ST). *Eur. Respir. J.* 7: Monograph 7, 241-261.
8. Rahman I, Gilmour PS, Jimenez LA, MacNee W. (2002) Oxidative stress and TNF-alpha induce histone acetylation and NF-kappaB/AP-1 activation in alveolar epithelial cells: potential mechanism in gene transcription in lung inflammation. *Mol Cell Biochem.* 234-235:239-48.
9. Deiana M, Dessi MA, Ke B, Liang YF, Higa T, Gilmour PS, Jen LS, Rahman I, Aruoma OI. (2002) The antioxidant cocktail effective microorganism X (EM-X) inhibits oxidant-induced interleukin-8 release and the peroxidation of phospholipids in vitro. *Biochem Biophys Res Commun.* 296:1148-1151.
10. Marwick JA, Kirkham P, Gilmour PS, Donaldson K, MacNEE W, Rahman I. Cigarette smoke-induced oxidative stress and TGF-beta1 increase p21waf1/cip1 expression in alveolar epithelial cells. *Ann N Y Acad Sci.* 973:278-283.
11. Kim H, Liu X, Kobayashi T, Kohyama T, Wen FQ, Romberger DJ, Conner H, Gilmour PS, Donaldson K, MacNee W, Rennard SI. (2003) Ultrafine carbon black particles inhibit human lung fibroblast-mediated collagen gel contraction. *Am J Respir Cell Mol Biol.* 28(1): 111-121.
12. Gilmour PS, Rahman I, Donaldson K, MacNee W. (2003) Histone acetylation regulates epithelial IL-8 release mediated by oxidative stress from environmental particles. *Am J Physiol Lung Cell Mol Physiol.* 284: L533-540.
13. Rahman I, Gilmour PS, Jimenez LA, Biswas SK, Antonicelli F, Aruoma OI. (2002) Ergothioneine inhibits oxidative stress- and TNF-alpha-induced NF-kappa B activation and interleukin-8 release in alveolar epithelial cells. *Biochem. Biophys. Res. Commun.* 302:860-864.